

Freshwater mussels are a diverse group of bivalves that carry out important jobs in aquatic ecosystems, like filtering nutrients and sediment, and providing habitat and food to other animals. They have a unique reproductive cycle that needs a host, usually a fish, to help them complete the cycle. They are also among the most imperiled groups of organisms in North America. There are 17 mussel species found in Maryland and one is not native. Several of the species found in the state only live at a few locations all over the country. Because of these reasons, the Maryland Department of Natural Resources has been studying the environmental conditions that may help explain freshwater mussel distribution in the state through the Maryland Biological Stream Survey.

Although the MBSS began collecting mussel data in 1995, much of the information about freshwater mussels has been collected since 2007. To date, 15 species of mussels have been collected through stream surveys. Since 2007, freshwater mussels were collected at 123 stream survey sites from an estimated 10% of 1st-4th order stream miles. The surveys also found new places where rare mussels live. We found that the eastern elliptio was the most common mussel in the state and that they were not likely to be found without American eels, their favorite host. In general, freshwater mussels lived in wider streams of larger watersheds with little urban lands, low nutrients, and higher biological index scores compared to streams where they were not present. Our results further support the idea that freshwater mussels are indicators of healthy streams.



The non-native plain pocketbook (*Lampsilis cardium*) from the Potomac River. This species may have displaced the similar looking native yellow lampmussel (*Lampsilis cariosa*).



The Eastern elliptio (*Elliptio complanata*) is the most common mussel in Maryland. In some streams they have dense populations that can filter the entire volume of water in a day.

